

MULTIPLEXED ELECTRODE ARRAY EXTENSION**Abstract of the Invention**

An apparatus and method for selectively interacting with electrically excitable tissue of a patient are provided. The apparatus includes an implantable pulse generator having a number of output sources that transmit pulse signals. An extension unit couples the implantable pulse generator to an implantable electrode array. The implantable electrode array has a number of electrodes, wherein the number of electrodes is greater than the number of output sources. The extension unit is configured to electrically connect the output sources to a portion of the electrodes.